



**ASL**  
Australian Society for Limnology

**ASL**

Australian Society for Limnology Inc.

**NEWSLETTER**

**Volume 45 # 3, September 2007**

## **AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.**

The Australian Society for Limnology Inc. (ASL) is an Australian-based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 650 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians. The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

**ASL Home Page - <http://www.asl.org.au/>**

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## **ASL Subscriptions are NOW due**

Dear ASL members

In December I will retire as ASL Treasurer. It would be wonderful to hand over a clean "slate" to the new Treasurer.

To all members who are not financial, I would be most grateful if you could visit [www.asl.org.au](http://www.asl.org.au) and bring your account and details up to date.

If you have a problem, please email me,  
[Margaret.Hart@waterscience.com.au](mailto:Margaret.Hart@waterscience.com.au)

Changing your email- Contact me as asap

Changing employment- Contact me as asap to have your email address updated.

Cheers Margaret  
(03) 5482 6235

## PRESIDENT'S REPORT

August and September came and went in a blur. We hosted the Scientific Steering Committee meeting of the Global Water System Project at South Stradbroke Island in late August, followed by the Third International Symposium on Riverine Landscapes – even managed to organise some record-breaking rain (unfortunately, mostly to the north of Brisbane) as well as a lunar eclipse for our international visitors.

The 10<sup>th</sup> International Riversymposium, on Environmental Flows, was held in Brisbane shortly after, co-sponsored by The Nature Conservancy. This was by far the largest meeting to date, with over 800 delegates from more than 50 countries. A key outcome of the conference was a declaration prepared and presented at the closing session on the need for protection and restoration of environmental flows. This is a call upon governments, development banks, the private sector, research institutes, and other stakeholder groups across the globe to commit to a range of actions for the protection and restoration of the environmental flows that support people and nature. Angela Arthington was a key contributor to the environmental flows panel at the meeting and will be convening a session on environmental flows at the joint ASL-NZFSS meeting in Queenstown. Further details of the declaration will be made available soon.

The combined ASL-NZFSS meeting in Queenstown is fast approaching. Hopefully, you have already registered and booked accommodation so that the Society is well represented. Please check the website and this newsletter for further details (<http://www.es.govt.nz/events/wit/index.aspx>). Eleven students have received travel support to attend the meeting – congratulations go to Anne Watson (U Tas), Anne Jensen (U Adelaide), Danielle Smith (La Trobe), Elizabeth Wallis (Monash), Jeremy Groves (U Canberra), Susan Lee (Flinders), Susanne Watkins (Monash), Evan Harrison (U Canberra), Cath Leigh (Griffith), Rob Rolls (UNE) and Katherine Cheshire (U Adelaide). It is great to see this level of interest and I am pleased that the Society can continue to provide this support for our students. Remember, the ASL AGM will be held on the Wednesday (5<sup>th</sup>) lunchtime (12.30-2.30 pm) – please make sure you attend and let either myself or Richard Marchant know if you have any specific items for the agenda.

I look forward to seeing you in Queenstown.

**Stuart Bunn**  
October 2007

## EDITOR'S NOTE



It is clearly a busy time of year ... judging by the lack of submissions to the newsletter!!! But after hounding people incessantly, I think we have some great contributions – so thanks to all whom I bullied!! And an even greater thanks to those who didn't need the bullying! I do particularly enjoy the excuses for the late/absent/missing contributions. The usual 'Oh, I must have sent it to the wrong e-mail' and 'I thought I had already sent this last week' (translation: I just bashed this out in the last 30 seconds) were joined for this edition by my all time favourite 'I can't believe you lost my submission – can you please be more careful this time' (offense is the best defense!!).

A highlight for me in this edition is Tim Doeg's article on water conservation in Melbourne. Check it out on p10 – a really interesting analysis of what can be done simply, and an insightful analysis of what the public really wants when it comes to the water crisis.

There has been plenty happening, on the conference front. I have heard great reviews of the 3rd International Symposium on Riverine Landscapes (TISORL) held on South Stradbroke Island in Queensland and of the RiverSymposium in Brisbane. Various ASL limnologists have also attended the NABS meeting in Columbia, the Ecological Society of America meeting in San Jose, California, SIL in Montreal, Quebec and the British Ecological Society meeting in Glasgow, Scotland (more on those later). It is great to see Australian limnology getting such important exposure at national and international levels.

Domestically we have just seen the latest ARC investments in research via the Linkage and Discovery programs, and there is some exciting aquatic research being supported. Congratulations to those who were successful.

Thank you to all the people who contributed to this edition. I know everyone is busy and I greatly appreciate the contributions – it makes my job so much easier. But where is the humour and salacious gossip?? There must be something happening out there along the lines of funny stories and embarrassing photos!! So let me know. **The deadline for the next edition will be December 1<sup>st</sup>.**

**Like the new format? Hate it? Let me know!!**

**Ross Thompson**

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## ANNOUNCEMENTS

### Australian Rivers Institute



### Research Training and Scholarship opportunities 2007/2008

The Australian Rivers Institute (ARI [www.rivers.edu.au](http://www.rivers.edu.au)) was established in 2006 to provide a focus for river, catchment and coastal research and education. Exciting new research opportunities are now available with Tropical Rivers and Coastal Knowledge (TRaCK) Research Hub.

ARI offers the following scholarship opportunities for students considering a Research Higher Degree (Masters and PhD)

- SEQWater PhD top-up stipend (\$10,000 pa) on water reservoir research for scholarship holders enrolled at Griffith University in 2008.
- TRaCK PhD scholarships for 1<sup>st</sup> or 2A Honours graduates (or Masters equivalent) or top-up stipends for APA scholarship holders at Griffith University (up to equivalent of 5 full scholarships @ \$25,118 pa). Further details about the TRaCK program can be found at [www.track.gov.au](http://www.track.gov.au). (Contact Prof Stuart Bunn – [s.bunn@griffith.edu.au](mailto:s.bunn@griffith.edu.au)).
- ARC Linkage PhD Scholarship (\$25,118 pa) in microbial ecology studying toxic cyanobacteria and viruses in Brisbane's water storages (with SEQ Water). (Contact Dr Peter Pollard – [p.pollard@griffith.edu.au](mailto:p.pollard@griffith.edu.au)).
- ARC Linkage PhD Scholarship (\$25,118 pa) studying forestry effects on stream foodwebs and ecosystem health (with Forests NSW) (Contact Dr Fran Sheldon – [f.sheldon@griffith.edu.au](mailto:f.sheldon@griffith.edu.au)).
- ARC Linkage PhD Scholarship (\$25,118 pa) studying the role of phosphorus in subtropical reservoirs (with SEQ Water). (Contact Dr Michele Burford – [m.burford@griffith.edu.au](mailto:m.burford@griffith.edu.au)).

Postgraduate students receive significant support for field and laboratory research and funding for conference travel.

For further information, contact Gina Palmer, ARI Manager:

Tel: (07) 3735 7510; Fax: (07) 3735 7615

E-mail: [ari@griffith.edu.au](mailto:ari@griffith.edu.au)

## Bill Williams Travel Scholarship (BWTS)

Applications are invited from research students for financial assistance in the form of the Bill Williams Travel Scholarship (BWTS) to enable them to present a paper or poster at an overseas conference, symposium or workshop. Bill Williams was a founding member of the Australian Society for Limnology, a leading pioneer of limnological research in Australia and widely known both inside and outside the country for his advocacy of the study of inland waters. He was very conscious of the need to encourage international exchange amongst limnologists, hence the inauguration of this scholarship.

The purpose of this scholarship is to enable research students to present their work in an international forum. Students who are carrying out research in any branch of limnology for a postgraduate degree (but not an Honours degree) are eligible to apply. The following rules apply:

1. Applicants must be current postgraduate students at any Australian University or have submitted their thesis within 12 months of applying for the BWTS.
2. Applicants must have been members of the ASL for at least 12 months and have current financial membership.
3. The BWTS will be awarded by a committee consisting of the ASL President, the ASL Treasurer, and a representative of the Bill Williams Memorial Committee.
4. Applications must include a written statement (no more than one A4 page) describing the research, its significance, and the stage that has been reached. The statement must be endorsed by the student's supervisor, who should confirm that the student has reached a stage where something useful can be presented. An abstract of the paper that the applicant proposes to present must also be included, and the presentation must acknowledge the scholarship in full. A CV should be included.
5. Applicants must submit a budget indicating the various costs of their trip. This should indicate how the scholarship will be used and what other support they hope to obtain. The intention is that the scholarship will cover a substantial amount of their costs, e.g. an airfare.
6. Award of the scholarship will be judged on: (i) significance of the work; (ii) originality and soundness of the research; (iii) the progress made; (iv) ability to present a clear and concise statement of the study.

One scholarship will be awarded next financial year (2007-08). Applications should be sent to **Dr R. Marchant, ASL Secretary, Museum of Victoria, GPO Box 666E, Melbourne VIC 3001 by 18 Oct 2007.**

## TOPICAL ISSUES – Water conservation

### Saving our urban water supply – the lazy way.

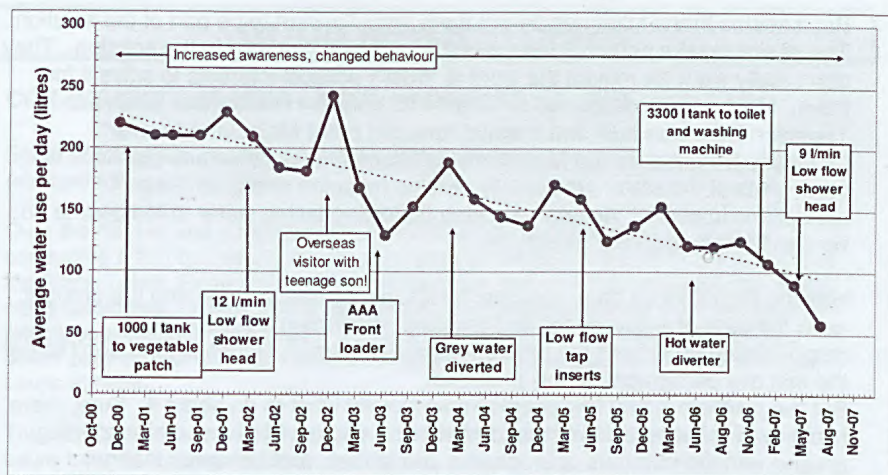
Tim Doeg

There was a recent article in our local Melbourne paper about the melting of the arctic polar icecaps. Apparently, the melting has been so severe this year that the North-West Passage along Canada, Greenland and Alaska is now close to ice free for the first time since satellite pictures have been taken in 1978. And if this is an indication of climate change, the arctic ice will all but disappear sometime in the future. What a tragedy! The poor old polar bears will soon be swimming around, trying to find a bit of spare ice to sit on. The darker water (as opposed to the bright ice) will increase the global warming rate. And if the Greenland ice caps melt, the low lying Pacific Islands and areas such as Bangladesh will disappear under water.

So what's the reaction? Three Cheers! As much as 25% of the world's gas and oil reserves might be located under the polar ice cap. And opening the North-West passage will mean that 9000 km will be knocked off the journey for ships between Asia and Europe. Fantastic! We can ship more cheap junk around the world, and pump more oil so we can all drive Hummers and pay 50c a litre (which is good because it will melt more ice, so we can get more oil).

I think it was at that point I realised that we may well all be well and truly doomed. But this isn't about global warming. It's about a little graph. And maybe a bit of hope. This graph (below) shows our household water use over the past seven years. Over that time, we (two adults and a dog) have been trying to reduce our water use by as much as possible. To that end, we have installed:

- Flow reducing inserts into all taps;
- AAA rated front loading washing machine (replaced broken top loader);
- Low flow shower head (9 litre per minute flow rate);
- Grey water system from washing machine to vegetable patch;
- Hot water diverter (recirculates cold water back into hot water system, rather than down the drain while waiting for the shower water to warm up);
- 3,300 litre rainwater tank, plumbed into toilet cistern, washing machine and a garden tap.



In seven years, we have reduced our daily demand on the Melbourne water supply from 220 litres per day to 57 litres per day. That is a saving of over 160 litres per day, or a reduction of 75% in our daily water use. To put this figure in context, a saving of 160 litres per day is the equivalent of 58,400 litres per year (even more in a leap year). If that level of savings could be made across the 1.7 million households in Melbourne, it would save about 100 GL of water a year (half the volume of the Upper Yarra Reservoir). And it is a lazy way of saving water – all we have done is set the house up to passively save water. We do exactly what we used to do – only we use less water doing it.

Well, that little graph has done the rounds of sustainability groups all throughout Melbourne. As a result, I have been giving lots of public talks about what we have done in our home, and what people can do in theirs. This has been to a wide variety of groups – including Probus (a retired professionals group), the local high school parents association, a local council Sustainable House workshop and the ATA (Alternative Technologies Association). The latest invitation is to present to a group of Victorian parliamentarians! And the e-mail has been running hot with people wanting more details and advice on how they can do the same thing in their house.

This produces a number of interesting observations. People are terrified about the water crisis in Melbourne (this is about Melbourne, but I suspect it applies in every large city). But they think it is mainly about the drought. When told that the crisis is actually about the near future when population growth means that our demand will be higher than the sustainable supply, they get even more worried. Add climate change into the mix .....

But it seems that a lot of people out there actually want to be part of the solution. The desire to take personal responsibility for being involved in the solution. They don't really want (or maybe the word is "trust") political interests to solve it for them. Maybe it's because we've heard it all before – I remember when the Thomson Dam was built that it would "drought proof Melbourne forever". Or maybe it's because the Melbourne solutions (desalination and pipelines from other parts of the state) are socially divisive (imagine sitting on Stage 4 restrictions in central Victoria, watching a pipeline taking water to Melbourne so we can flush it down our toilets).

Has the recent focus on environmental issues, climate change and the drought, seen the birth of a new social and personal movement towards taking responsibility for solving the problems that we cause? Hopefully, but don't forget the first two paragraphs of this postcard.

But the problem is that few people know exactly what to do about it. Sure, there is plenty of information available on options – you could fill any major sporting ground with the numbers of brochures and leaflets and handouts that get distributed around – but the key question people want to know is which option is suitable for my house. Just look at the range of rainwater tank sizes, shapes, volumes and material. We are told they are good, but who can decide which one to buy?

I suspect what people want is more personal information, not reports and strategies and leaflets in the letter box (what actually does it mean when the strategy says that installing AAA shower heads will save 20,000 ML by 2050?). People want to know what works in their house, what are the drawbacks (never seems to be a bad word in any of the brochures), will it actually save water, how much will it save, will it actually make a difference?

So graph your own water use. If it has gone down, send it to some-one. Pass it around your street, send it to your council or local member of Parliament – you can be sure there is some-one out there who wants to make a difference, and your story might just be the spur to make them take the next step.



## GOOD NEWS STORIES

### CORANGAMITE CRATER LAKES. PROGRESS AT LAST

**Stuart McCullum** reports on the progress to protect these important systems  
(abridged with apologies, Ed.)

Over the last two and a half decades, several groups and individuals have been conducting a firm but friendly re-education program in the Corangamite Shire, home of the Crater Lakes. Fiona Morris of Gnotuk has been the ringleader and motivator of the many Geologists, Limnos, Climatologists and conservation activists that have kept up a relentless pressure on the Shire's planners and councillors. We have 'seen off' one senior planner who was just too keen on development and elected a Mayor who is a Limno at heart.

The latest victory was refusing a permit to mine the geologically spectacular Mount Leura for road building material!

An excerpt from the local paper summarises the issue ...

**Corangamite says: no quarry** (From the Warrnambool Standard)  
**MADELINE HEALEY**  
August 30, 2007

*A CONTROVERSIAL scoria quarry proposed for Mount Leura will not go ahead after all but one Corangamite Shire councillor rejected the proposal. David and Joan Clay had applied to quarry 14 hectares of their Black Rock Road property, extracting 600 cubic metres of scoria. The council received 38 objections to the plan. At the shire's meeting on Tuesday all councillors except Jim O'Brien agreed with the recommendation of planning and building services manager Michelle Grainger that the quarry shouldn't go ahead. Mayor Ruth Gstrein said the main reason councillors voted against the quarry was their concern about its impact on the cultural and historical significance of Mount Leura and tourism. "The significance of the site is paramount because it's a very important scoria cone within the nested marr," Cr Gstrein said. "We get 77,000 people who go up the mount each year. The proposed site wasn't going to be visible from the car park but from the walking trails and other viewpoints it would have been obvious." Cr Gstrein said that Cr O'Brien's argument for the quarry was that the shire needed more scoria to use for building roads and tracks. A neighbour to the quarry, Emma Bell, said she was happy with the result. "I don't think they should dig up what is a very significant volcanic site," Ms Bell said. Member of the Mount Leura and Mount Sugarloaf Management Committee Gail Watson said she was happy the council had recognised the site's importance. "I want to congratulate them for their vision in protecting it from further quarrying," she said.*

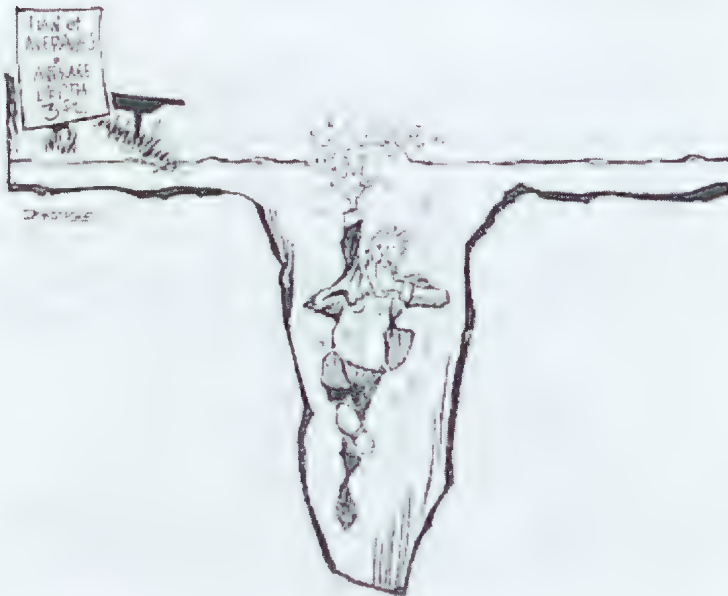
However, one of the most encouraging aspects of the 25 years of campaigning came about due to the foresight and generosity of Professor Patrick De Decker (ANU Earth and Marine Sciences). Patrick had often claimed that scientists were to blame for the

poor knowledge base and appreciation of their familiar landscapes. He felt that the scientific community was letting the locals down by not doing enough to communicate their research to those that lived and worked within these landscapes. How could they be expected to appreciate fully their scientific significance if we didn't take the time to tell them?

On Sunday September 2 2007, everything fell into place. The good prof was in Camperdown sampling from Lakes Gnotuk and Bullen Merri, the Shire was becoming more interested and the community wanted to know about the lakes that had caused such a fuss. For two hours, an audience of 80 interested locals listened intently as they learned about the Geology, Biology, Chemistry and History of their lakes. CD's of the Powerpoint presentation were also made available to ensure the spreading of the message. It was a very thorough way of ensuring that the local authorities now have an even better educated and motivated set of citizens, keen to protect their natural systems.

Congratulations to all those who have been involved with this Crater Lakes campaign.

**Stuart McCallum**  
Bannockburn



## MEMBER'S MUSINGS

### KILLIECRANKIE DINOSAUR FINDS SECOND WIND IN THIRD MILLENNIUM

By Ian Bayly

The last time I wrote something for the ASL Newsletter was for the March 2002 issue (vol. 40 no.1). That was to pay tribute to my colleague Bill Williams who died on 26 January 2002. The obituary that appeared in the March 2007 ASL Newsletter for James C.F. Wharton was a timely reminder of my own mortality. With Jim's death only three of the eight members of the inaugural executive committee of the ASL (founded in 1962) are now extant: Alan Weatherley (now resident in New Brunswick, Canada), Edgar Riek (Ainslie ACT) and me.

Although I officially retired at the end of 1995, my interest in matters limnological was not extinguished at that point. Over the years since my "retirement", I have enjoyed reading in the ASL Newsletter about the activities of people in various Australian institutions. Nothing has appeared about the activities at the Killiecrankie Limnological Laboratory, and unless I put pen to paper [yes, dinosaurs still do the sort of thing literally because they're not trained to think directly onto a keyboard!] nothing will, because this laboratory has a staff complement of only one!

Is there really a place called "Killiecrankie"? Sounds implausible but it does exist – check the list of postcodes if you doubt me. Killiecrankie is a small township on the north-west coast on Flinders Island (population 850) located on the eastern side of Bass Strait. You can blame (or admire) the Scots for the name (check the Web, and you will find that there was once a bloody great battle at the Pass of Killiecrankie in 1689). It's not big but it's beautiful, and at least 10 souls are proud to call it home. It has been my home for most of the time since my official retirement. I have a one-room laboratory with three microscopes, some basic glassware, micro-slides, mountants and fine needles for micro-dissections.

In recent years I have resumed my long standing interest in Antarctic limnology. During the 1980's I made two trips to Davis Station, Antarctica, to study lakes in the Vestfold Hills. Between 1978 and 1995 I published nine papers on Antarctic limnology and co-edited the book "Biology of the Vestfold Hills". With respect to Antarctic Limnology, I fell asleep in 1995. It took a fateful 'phone call from John Gibson (then with CSIRO Marine Research, Hobart) in mid-June 2002 to wake me up from my slumber and re-activate me. Since that fateful call I have greatly enjoyed a more or less continuous exchange of data, literature and ideas between John and me. John has kept me supplied with precious zooplankton samples from Antarctica, and encouraged me to keep going. In recent times we have published two joint papers aimed at overthrowing or challenging what had become the conventional wisdom regarding Antarctic zoogeography; we reckon that, Pleistocene glaciation notwithstanding, some of the taxa have had a far more ancient association with that continent than has hitherto been generally admitted. We have also co-authored a chapter of a book on high latitude limnology to be published next year by Oxford University Press. Details of our publications are given below.

May I say that although I am outside the mainstream loop these days, I still greatly enjoy my continuing contacts with limnological colleagues. Brian Timms (who seems to become more and more productive the older he becomes!) sends me a constant stream of manuscripts which I always enjoy reading. Brian is a tireless worker and an excellent communicator. Russell Shiel also keeps in touch regularly, and we have recently produced a joint paper (see below). I also hear from Sam Lake, Yoshi Kobayashi, Stuart Halse, Joan Powling and Kerrie Swadling. Patrick De Deckker always sends me some interesting items at Christmas time – thank you Patrick. I have probably omitted someone who should be mentioned in this context – please forgive me. If any past colleague or student would like to contact me my e-mail address is: iaebayly@bigpond.com.au

Those interested in the history and origin of the ASL may like to read the obituaries (there were two of them) for Aubrey Nichols, the first president of ASL, that were written by Sam Lake and me in the February 1987 (vol.25, no.1) issue of the Newsletter.

#### Holocene dinosaur tracts from the third millennium

1. Bayly, I.A.E. (2001). Invertebrate occurrence and succession after episodic flooding of a central Australian rock-hole. *J. Roy. Soc. W. Aust.* 84: 29-32.
2. ----- (2002). The life of temporary waters in Australian gnammas (rock-holes). *Verh. Internat. Verein. Limnol.* 28: 41-48.
3. ----- (2002). Australia's early water wars: Aborigines versus European explorers. *Water (J. Aust. Water Assoc.)* 29(4): 39-42.
4. Reid, J.W., Bayly, I.A.E., Pesce, G.L., Rayner, N.A., Reddy, Y.R., Rocha, C.E.F., Suarez-Morales, E. and Ueda, H. (2002). Conservation of continental copepod crustaceans. In 'Modern Approaches to the Study of Crustacea.' (Eds E. Escobar-Briones & F. Alvarez) (Kluwer Academic: Dordrecht.) pp. 253-261.
5. Bayly, I.A.E., Gibson, J.A.E., Wagner, B. and Swadling, K.M. (2003). Taxonomy, ecology and zoogeography of two East Antarctic freshwater calanoid species: *Boeckella poppei* and *Gladioferens antarcticus*. *Antarctic Science* 15: 439-448.
6. Bayly, I.A.E. (2003). Baiaime's waterworks. *Water (J. Aust. Water Assoc.)* 30(8):64-65.
7. Gibson, J.A.E. and Bayly, I.A.E. (2007). New insights into the origins of crustaceans inhabiting Antarctic lakes. *Antarctic Science* 19: 157-164.
- 8.. Bayly, I.A.E. and Shiel, R.J. (2007). Intersexuality in *Boeckella triarticulata* (Thomson, 1883) (Copepoda, Calanoida): a trap for unwary taxonomists. *Crustaceana* 36 (In press.)
9. Rautio, M., Bayly, I.A.E., Gibson, J.A.E. and Nyman, M. (2008). Zooplankton and Zoobenthos in high latitude water bodies. Chapter 13 in 'High Latitude Lake and River Ecosystems.' (Eds J. Laybourn-Parry & W.F. Vincent) (OUP, Oxford.) (In press.)

## CONFERENCE REPORTS

### 3rd International Symposium on Riverine Landscapes (TISORL)

27 August-1 September, 2007  
Queensland.

#### Global change and river-floodplain ecosystems

The 3rd International Symposium on Riverine Landscapes (TISORL) was held 27 August-1 September, 2007 in Queensland. This dynamic meeting included international experts in river ecology, human population dynamics, hydrology and water use, climate, and bio-assessment who were invited to discuss the implications of global-scale changes for river-floodplain ecosystems and to identify future research directions. The global perspective was emphasized in plenary sessions, including the Global Water System Project ([www.qwsp.org](http://www.qwsp.org)), the Millenium Ecosystem Assessment reports ([Click here](#)), and the global database on large dams and their effect on river flows (Nilsson, C et al 2005). It was remarked that this meeting had the greatest linking of river hydrologists with climate change specialists seen to date. Alternative Futures Analysis was shown to be an effective tool for community decision-making about land and water use. A particularly successful example is the Willamette Basin project in Oregon, presented by Prof Stan Gregory, which has used digital flyover scenarios to work with community stakeholders in selecting more environmentally-friendly future management options. A similar approach at Blackberry Creek near Chicago led to more environmentally-sensitive, sustainable urban designs for new subdivisions.

[Willamette Basin report \(pdf\)](#)

[Blackberry Creek Report \(pdf\)](#)

Nilsson, C., Reidy, C.A., Dynesius, M., & Revenga, C. (2005) Fragmentation and Flow Regulation of the World's Large River Systems. *Science*, **308**, 405-408.

It is anticipated that four papers will be produced as a result of cross-cutting workshops held as part of the symposium, on the following topics (senior authors indicated):

- Protection of aquatic biodiversity David Dudgeon and Jane Hughes)
- Connectivity and river-floodplain-coastal subsidies Bob Naiman & Michael Douglas)
- Flow-ecology relationships (Angela Arthington & LeRoy Poff)
- Indicators and assessment (Charlie Vorosmarty & Caroline Sullivan).

All plenary papers are now available on the conference website under Plenary Sessions <http://www.griffith.edu.au/conference/tisorl2007/>

## 30th Congress of the International Association of Theoretical and Applied Limnology (SIL)

**August 12-18, 2007**

**Palais des Congrès, Montréal, Quebec, Canada**

The 30<sup>th</sup> Congress of the International Association of Theoretical and Applied Limnology was held 12-18 August in Montreal, Canada. SIL is currently going through a period of revitalization, and the meeting really was dynamic and interesting, with a strong representation of both European and North American aquatic ecologists. One of the particularly interesting things for me, at only my second SIL meeting, was the excellent science being presented from third world countries. In addition to an interesting and thought provoking plenary from Lauren Chapman on African lakes there were a large number of studies from South and Central America, south east Asia and Africa.

Themes which clearly emerged from the conference were the ongoing water crisis globally, both in terms of quantity and quality – toxic algal blooms being a high profile case of the latter. Problems with toxic blooms in Quebec during the conference provided SIL with a very high profile, and there were nightly reports on the news from the conference.

Montreal is, of course, a dynamic and exciting city, with an active nightlife and good beer, food and music. Naturally we all indulged in all of those things. A highlight for many (I was too cheap to go!!) was the conference dinner, which had an aquatic theme and was complete with a Cirque de Soleil artist performing during the meal.

Overall SIL was an example of what I enjoy about conferences, it was relatively small (compared to a NABS or ESAmerica), the science was top quality and it was set in an environment that was convivial and encouraged us to socialize and enjoy each others company. More than that, it was carbon neutral and had a high profile in the media – perhaps contributing more than many meetings do to further our efforts to protect and restore aquatic environments and highlight aquatic issues.

**Ross Thompson**



## **17th Symposium of the International Association of Cyanophyte Research**

**June 25-29, 2007  
Yucatan, Mexico**

Toxic algal blooms have spurred a series of research activities on Blue green algae and incidentally brought the group undeserved ill repute. On the other hand, the significance of these prokaryotes known, as Cyanoprokaryotes in the living world is also being brought to our attention. It is blue green that built up the oxygen-enriched atmosphere and the ozone layer that paved the way for the emergence and evolution of higher organisms. Some of the most pristine streams of the world harbour many Cyanobacteria, which are key indicators of high water quality. It is not surprising that there is resurgence of collaborative research outputs by molecular biologists limnologists and taxonomists recently as shown by the 17th Symposium of the International Association of Cyanophyte Research held in Merida city in the Yucatan peninsula of Mexico, in June 25-29 this year.

The venue was university of Yucatan an ideal haven for high diversity of cyanobacteria because of the high concentration of calcium carbonate and alkaline environment. Cyanobacteria mostly prefer alkaline waters.

The Yucatan peninsula emerged from the seabed few million years ago carrying remnants of shells everywhere. You pick up any stone in the jungle; you are likely to see shells in it.

The conference was well attended by 150 delegates from almost all parts of the world. Glenn McGregor from Queensland and myself represented Australia presenting oral papers and posters. Altogether there were 90 presentations. Most of the papers dealt with morphological and taxonomic aspects of Cyanobacteria mingled with molecular phylogeny, ecology and hydrobiology.

Fieldtrip to Celestun -a coastal fishing village, watching hundreds of young Pink Flamingos pairing, playing and feeding, in the estuary, underground rivers breaking into crystal clear fresh water ponds, and collecting blue green algae and examining the day's catch under the microscope back in the conference venue were extremely enjoyable activities, embedded in the conference program.

Underground caves with flowing streams occasionally breaking into the surface as sinkholes (CEYNOTES) peeping into the sky were deceptively mysterious. I visited a few of such sinkholes travelling over 200 km into coastal bush jungles. What appears to be little wells surrounded by Ficus trees sending their roots through the roof of such sinkholes and ultimately to the sediment of the pools, were spectacular. These pools are several meters deep and lead into underground rivers. Although suitable for swimming and snorkelling, a high degree of judgement is required before one takes a plunge into one of these sinkholes. In visiting one of these sinkholes my collection of blue green algae hanging from the side wall, was interrupted by a rescue operation I was called upon to participate when an unsuspecting lady tourist of massive dimensions made an impulsive plunge into the deep cool waters of a sink hole. Even under such a stressful

job I could not help thinking about the vast number of virgins sacrificed into the deep sinkholes by the Mayans of ancient Mexico to appease the gods.

The pyramids like those of Uxmal which I visited bear eternal testimony to the quest of the Mayans in reaching the rain God pleading for release of water from heavens. Motherland of Corn (maize) and Tequila- a drink that may elevate some to a higher spiritual level, distilled from an Agave plant species, Mexico provides an ideal playing ground for any limnologist. We in Australia face the same problem as Mayans i.e. lack of water, but what are our solutions? Well is it not the theme of the next ASL conference?

**Mexican sinkhole systems ... (courtesy of Nasto Labastida ,CIMA & CIMA tours)**





**Jacob John**

## **6th Large Branchiopod Conference**

**September 16 – 20, 2007  
Vijayawada, Andhra Pradesh, India**

This was held September 16 – 20 at the Punnami Hotel, attractively located on the Krishna River in Vijayawada, Andhra Pradesh, India. For those taxonomically illiterate, large branchiopods are fairy shrimps, clam shrimps and shield shrimps (the small ones are cladocerans). Besides having a similar basic body plan, the large branchiopods are further united by their habitat preference for temporary waters.

While it was great to see overseas colleagues networked from previous conferences and though some important papers were presented (e.g. relationships and sex among clam shrimps, Australian clam shrimps, large branchiopods of saline waters, genetic diversity of *Artemia*), many papers were rather pedestrian. This is not to deny the value of single species taxonomic papers, or papers on life history studies and special adaptations of these unique animals, but I cannot get excited about the greater presence of some short-chained fat in one species compared with another when used as feedstock in aquaculture (to me this is technical stuff). The most entertaining paper was on the conservation of a fairy shrimp affected by iron ore mining in Brazil. The locals got excited about shrimp culture for commercial purposes in Thailand which has been patented in that country and could be copied in India. The field trip was poorly organised and little more than a drive through depressing villages. Although large branchiopods occur within cooee of Vijayawada and the wet weather was conducive to their presence, we were never taken to see them. Also frustrating was all the free time (21 hrs) between the official opening and first scientific session and the last day which consisted of just one hour's discussion. Many of us made use of all this spare time by going on our own tourist excursions.

Outwardly the conference was all glitter (great conference satchel, good abstract book, marvellous cultural night, much pomp and ceremony). Scientifically it was almost a waste of time – not enough good papers to justify the expense. In fact this series of specialist conferences is in danger of being extinct. The previous one in Australia was torpedoed by a failure to produce a published conference proceedings. This one will probably avoid this ignominy (I could pontificate about the difficulty of publishing conference proceedings now that *Hydrobiologia/ Developments in Hydrobiology* has a different editorial policy). Another major problem these days for specialist conferences like this one, is the reluctance of North Americans and Europeans to travel to way off lands, especially to third world countries. In hindsight you cannot blame them for avoiding this one. Our group will reconvene, hopefully with better science and less hollow ceremony, in Europe in 2010.

**Brian Timms**

## REPORTS FROM THE TRENCHES

MONASH FRESHWATER ECOLOGY  
RESEARCH LABORATORY, SCHOOL  
OF BIOLOGICAL SCIENCES



It has been conference season at Monash, with everyone seeming to be off to some different part of the world or the country. **Sam Lake, Paul Reich, Damien McMaster** and **Nick Bond** attended the Ecological Society of America meeting at San Jose, California. Sam presented his preliminary analyses of what we do know (and more importantly don't know) about drought. Nick's presentation on environmental flows modeling from the Broken-Boosey system was well received, as was Paul's work on restoration.

Sam then moved on to the SIL conference in Montreal, where he met up with **Ross Thompson**. Ross presented his recent work on pond food web systems, with Sam presenting a reprise of the drought work. It was great to see a good representation of Australian limnology at SIL. September saw Nick, Paul and **Amber Clarke** attending the TISORL conference in Queensland, which they swear was not just a tropical jaunt. Nick developed a pretty serious fever but managed to just hang on to give his talk - which was well received. Plenty of doom and gloom talks at the meeting about the dire state of global water resources - one common theme that emerged was no matter how you look at it- Perth is pretty screwed in the not too distant future... . Ross attended the British Ecological Society meeting in Glasgow in September as well, where he received the BES Elton Prize for his work on the role of dispersal limitation and neutrality in structuring stream communities.

On the home front we are gearing up for another field season, with Amber Clarke continuing her work on first order streams, **John Moringiello** starting to sample fish for his work on life history traits and interactions with hydrology and **Susie Ho** looking forward to some quality time looking at food web consequences of *Gambusia* in wetland food webs. In a slightly earlier phase, **Sam Imberger** and **Mardiana Ali** are starting up their projects this summer as well (see the Water Studies Centre report from Mike Grace below). **Elise King** and **Beth Hawkins** can still be seen crouched over microscopes in the lab (lovin' those bugs), while **Karen Cooper** is in the throes of analysis and writing. At the other end of that tunnel we congratulate **Dave Reid** on finishing up - his next move is Adelaide (insert derogatory comment about Adelaide here).

There is the usual suite (gaggle?? clump??) of Honours students. **Will Sowersby** is writing his work up on habitat preferences and the effects of trout on riffle galaxiids, and **Sara Jacobs** will shortly submit her work on interactions between social perceptions and biological realities of urban stream health. **Alissa Monk** (marine ecotoxicology), **James Douglas** (trout-galaxiid interactions) and **Fiona Melvin** (climate change biology) have all commenced work with Ross, while **Huon Clarke** (factors influencing emigration decisions in fish) has started his Honours with Nick Bond.

This month has also seen the arrival of **Iraima Verkaik** from Spain, to carry out a short period of research on the effects of fire on streams in Victoria. Iraima is currently coming to terms with the fact that Australian's don't usually start their evenings at 11pm!!

Larger projects are moving along nicely, with **Elisa Raulings** and **Kay Morris** using the recent Gippsland floods to their advantage in their ARC funded project exploring the effects of wetland plant dispersal on community structure. Damien, Paul, Sam and Nick continue to work on the Broken-Boosey system. Paul Reich is moving his MDBC funded riparian restoration work into it's next phase, with new sites being established in NSW. **Thomas Daniel** is a new recruit on that project, at the moment slugging it out in Tim Cavagnaro's lab analyzing soil samples but soon to move on to analysis and interpretation of the hydrological data. **Laura Williams** has also joined Sam and Paul to review the threats, impacts and management of *Phalaris* in riparian zones for GBCMA.

**Ross Thompson**

#### WATER STUDIES CENTRE DEPT. OF CHEMISTRY



2007 has thus far been marked by a series of dynamic processes in the WSC - comings, goings and arrivals, commencements and completions and a major review! From an overall perspective we were delighted that the external review of the Centre resulted in a recommendation to continue operations and to further enhance linkages with our colleagues in the other Schools at Monash and beyond. We've bid farewell to **Chris Walsh** who's moved across town to join the School of Social and Environmental Enquiry at Melbourne Uni after spending over a decade at the WSC, and also to **Phil Monbet** who is now spending the second half of his 3 year Marie Curie Outgoing EU Fellowship at the University of Plymouth with Prof Paul Worsfold. To balance the exodus, Dr **Perran Cook** has recently joined the School of Chemistry and the WSC as a new lecturer. Perran was most recently at CSIRO Land & Water in Queensland, preceded by a Humboldt Fellowship at Bremen, after a PhD at the University of Tasmania. Perran's research interests focus on nutrient biogeochemistry, especially in estuarine systems.

We've had two successful PhD Completions since our last report in December 2006: Dr **Bonnie Atkinson** (Ecosystem Responses to Stream Rehabilitation in the Granite Creeks) and Dr **Asep Saefumillah** (The Release of Organic Phosphorus from Aquatic Sediments, cosupervised by **Ian McKelvie**). Bonnie is now working for SKM while Asep has returned to Indonesia where he is learning about life as an academic. Sulfikar is continuing to make excellent progress towards completion of her PhD and recently had a paper on Uncertainty in Nutrient Spiralling published in *Ecosystems* where it has generated a lot of interest, including at the recent SIL conference in Montreal. **Barlah Rumhayati** is waiting to hear the positive words we hope the examiners will write about her thesis on measurement and characterization of organic phosphorus compounds in surface and pore waters using the Diffusive Gradients in Thin Films (DGT) technique. **Shane Perryman** (co-supervised by Barry Hart & Gavin Rees) is continuing to work on production of his thesis, which is complicated by having student and supervisors in different states! **Colette Thomas** is in the very last stages of writing and hopefully will

have submitted her thesis ("Development of a Bayesian Belief Network for ecological decision support: tropical seagrass management in the Great Barrier Reef (Australia).") by the time this appears in print! Our two Masters students, **Sarah Alexander** and **Chamindra Vithana**, are also both writing their theses. Sarah's thesis on the Impacts of the 2003 Victorian Bushfires on Receiving Waters is nearing submission while Chamindra's work on the role of organic matter and microbial activity on nutrient dynamics in the Royal Botanic Gardens in Melbourne is planned to be finished by Christmas. To overcome the quietness in the labs due to all this writing activity, several students have commenced projects this year. **Keryn Roberts** is looking at the effects of urbanization on denitrification for her Bachelor of Environmental Science Honours project, while **Sam Imberger** has commenced her PhD, under the joint supervision of Mike Grace & Ross Thompson (from Biological Sciences), and **Mardiana Ali** has the same supervisory team looking after her PhD as well. Sam's project is examining questions of scale when looking at the effects of urbanization and riparian vegetation on organic matter dynamics. Mardiana, our most recent addition, has moved to Melbourne from Malaysia and will be looking at the role of Typha in both biogeochemical and food-web dynamics.

**Katrina Lansdown** (PhD project on using nitrogen isotopes to trace the origin of nitrate in surface waters, cosupervised by Ian Cartwright in Geosciences) is in the last stages of experimental work – now that I've written this, she can be safe that I have no more little "projects" for her! I'm sure she dreads "Ummm, Katrina, I've just read this interesting paper where they... What can your methods add to this?" **Robyn Overall** is continuing her PhD project on the development of Bayesian models for investigating the effectiveness of Melbourne's stormwater wetlands for nitrate removal and has just presented a section of her work on the effects of metal toxicity on denitrification at the Wetlands Pollution conference in Estonia.

Mike recently spend a most enjoyable and informative time discussing stream biogeochemistry and organic matter dynamics with the research groups of Jen Tank and Gary Lamberti at Notre Dame University prior to attending the SIL conference. It was great to see a dedicated symposium at this conference on N dynamics in streams.

**Mike Grace**

#### **AQUATIC ECOSYSTEMS UNIT, DEPARTMENT OF NATURAL RESOURCES AND WATER, LONG POCKET LABORATORIES, INDOOROOPILLY, QUEENSLAND**

It's been a while (years??) since the Aquatic Ecosystems Unit has provided an article to ASL, so there is a lot to catch up on...



**Queensland Government**

The unit is still based at the Long Pocket Laboratories at Indooroopilly, but there are plans to move us to a new Ecoscience Precinct at Boggo Road - an historic jail site - which may amuse some people I suppose! I believe that there will be new buildings built for the purpose and that the old jail is not being retrofitted to accommodate us. We have spent a fair bit of time reviewing floor plans, lab space, and even the colours of the office partitions! The move isn't planned to take place until something like 2009, so I'll stop prattling on about it now.

The Ambient Biological Monitoring and Assessment Program (ABMAP) is still in existence. We had a bumper round of field work earlier this year, with **Alisha Steward** being out for 9 weeks and many other staff, including some regional biologists, putting in their time. It wasn't all bad for Alisha, with sampling (and camping) taking place in the lovely Shoalwater Bay Military Training Area, then a trip to Carnarvon Gorge for Easter, a day in Airlie Beach and a opportunity for a famous mud crab sandwich at Miriam Vale to wrap up the Central Province work, followed by a short stint around Noosa in the Wallum Province. **Glenn McGregor** owes me big time for sending him off to Fraser Island for 2 weeks, and **Jon Marshall** sampled on North Stradbroke Island and Moreton Island! Sounds more like a holiday report than a field work one... I better mention something bug-related then - Alisha picked her first ever Blephariceridae! Cool, for a maggot. We hardly ever see them up here in Queensland, so it was a memorable occasion. Bill Senior has recently joined the team (and ASL) from England and has processed a good deal of the macroinvertebrate samples.

**Glen Moller, Louisa Davis and Jo Blessing** are redesigning and aligning ABMAP into SEAP (Stream and Estuarine Assessment Program), and the program is being piloted in Biogeographical Provinces across the state prior to rolling out the program implementation. However Glen has now called it a day with the unit and has left for a life in the Water Accounting group in town. **Pete Negus** will take over the role of SEAP project leader until the position is advertised and filled.

Glenn and Jon have spent even more time on North Stradbroke Island recently for another purpose - to investigate groundwater dependent ecosystems and how groundwater extraction will influence them. They are currently on the island, which coincides with the arrival of masses of schoolies that are partying hard there. I'm sure the schoolies will be sticking to the beach, rather than the many wetlands and streams on the island that Glenn and Jon are investigating. **Amanda Carter** is currently holidaying overseas, but she has also been involved in the Stradbroke Island project.

**Diane Conrick** submitted final reports for the Queensland Wetlands Programme wetland indicators project and the NLWRA national wetland indicators project to the respective funding bodies before she disappeared overseas on a well-earned holiday. Diane is now managing the new NWC-funded project to test the FARWH in Queensland.

**David Moffatt's** EHMP team are busy preparing for another sampling round in South-east Queensland with a cast of thousands. Well, nearly. Staff include **Dean Holloway, Alana Klupfel, Skye Cameron, Stephen Moore and Jessica Pettitt**, plus a swag of casuals.

In other project news - **Norbert Menke**, a population modeller, has joined the group to work on risk assessment using Bayesian Belief Networks in conjunction with regional biologists. **Jason Dunlop** is working on the Water Sensitive Urban Design project, and **Jaye Lobbegeiger** is working on waterhole persistence and quality in the Moonie River.

**Tamara Ivastinovic** has joined the group and taken over the dots and dashes work in the algae lab.

We are progressing well towards ISO9001:2000 Certification for Quality Management thanks to **Farah Zavahir**, and are aiming to become certified by December this year.

We have also trained some staff members to be Internal Auditors which will prove useful in the long-term for quality management of our business.

Finally, a big thank you to **Annette Ritchie** for all her fantastic work sorting out the labs, equipment, calibrations, and other god-like activities. It's amazing she is still sane, considering what we put her through.

Keep on bugging...

**Alisha Steward**

## ECOHYDROLOGY SECTION, WATER ASSESSMENT BRANCH, DPIW, TASMANIA



The Conservation of Freshwater Ecosystem Values GIS database is going from strength to strength as **Danielle Hardie** puts the finishing touches on the technical report (aka the bible) and reviews the validation reports conducted by Hydro Tasmania and Peter Davies and Co. at Freshwater Systems. Preliminary looks suggest the database is holding up relatively well to groundtruthing, but like most databases, models and indeed science, will need to be used at the appropriate scales for best results. The CFEV database is already proving to be an invaluable tool in identifying "hotspots" of freshwater conservation value in a catchment, not to mention its usefulness in communicating concepts of "ecological values and assets" to water users. Meanwhile, Dan's erstwhile companion **John Gooderham** is keeping the pressure on to deliver a corporate-user interface that looks like it might actually work intuitively. Who knows, stranger things have happened.

Since our last missive, **Martin Read** now manages the Water Assessment Branch and one of his first moves was to entice **Bryce Graham** back from Hydro Tasmania to become our fearless leader of the Ecohydrology Section, a move applauded by all here. One of Bryce's first moves was to find hydrologist **Suzanne Witteveen**, all the way from WA, effectively doubling our Hydrology staff and ensuring **Shivaraj "The Prince of Bhutan" Gurung** gets no more manager's specials. Sue is settling in well and relishing the lack of salt in the Tassie landscape!

The river health team have just completed the spring round of AusRivAS monitoring in record time, and **Tom Krasnicki** and **David Horner** will begin testing the brand new Tasmanian River Condition Index in each of the three Tasmanian NRM regions.

**Justine Latton** has just returned from maternity leave and is reacquainting herself with CRFEV dam assessments and bug-wizardry. **Scott Hardie**, who filled in for Juz during her absence, has now joined the environmental flows team for the next two years and will start with tackling the Macquarie River with **Chris Bobbi**. Scott recently received his PhD with flying colours and is keen to try his hand at the flows game for a bit. He's also looking at building a library of seasonal and hydraulic flow requirements for Tasmanian fish, monitoring lake level manipulations on the golden galaxiids of Lakes Crescent and Sorell, and contributing to the Tasmanian Environmental Flows (TEFlows) Project. Phew. But most of all he wants to see the pies make it to the granny.

**Chris Bobbi** organised an environmental flows workshop which brought together effflows practitioners from Queensland, Victoria and NSW to review the Tasmanian Environmental Flows Framework and its application. Participants included Paul Bennett, Steve Nichol, Julie Coysh, Mike Stewardson, Tim Doeg and Terry Hillman, and after horror flights, it turned out to be an extremely productive exercise. Unfortunately after all his hard work Chris was unable to make it to the workshop, but he got to listen to two days worth of taped talking and Gooders gags so he didn't entirely miss out. Chris and Bryce have just returned from the Third International Symposium on Riverine Landscapes as well as the 10th Riversymposium and are positively brimming with ideas and directions for effflows assessments and implementation down here, so lucky there's a long list of catchments to try them out on.

The TEFlows project is just entering its second year of progress, and **Dan Warfe** is somewhat surprised that despite monster floods ripping out YSIs and bridges, things are actually progressing relatively well. Sort of. Okay, we've spent months in the field and there's an awful lot of samples waiting to be processed, but the second full season of sampling has been conducted and there's only six more to go! Dan and **Greg McDonald** have been ably assisted in the field by pretty much everyone in the Ecohydrology section: **Scott, David Spiers, David Horner, Gooders, Dan Hardie** and **Tom Krasnicki**. The project's technical team of Greg will double in capacity in a couple of weeks when we're joined by Mike Male, who, like Greg, took the plunge to move down from the north island. Smart man.

#### **Inland Fisheries Service, Tasmania**

The Inland Fisheries Service has moved from Derwent Park and now resides out in New Norfolk on the banks of the Derwent River. So...a bunch of fisheries guys...a trout-laden river...right. But despite that seemingly insurmountable distraction, and maybe because you can never have enough, **Eoin Ryan** and **Phil Adams** have been hard at work building a trout hatchery adjacent to the new offices. The hatchery is fully recirculated and uses the latest biofilter technology, and last month it was officially opened by the Minister for Primary Industries and Water, David Llewellyn. In the past, production at the historic Salmon Ponds hatchery relied on flows from the Plenty River and has been hampered by low discharge and large temperature fluctuations. The new system contains 100,000 litres of water and consists of 16 tanks, 12 egg incubators and some hatching troughs. All the parameters required for successful rearing of trout can now be controlled, including temperature, dissolved oxygen levels and pH. The hatchery will give the IFS the capacity to produce the numbers of brown and rainbow trout required for stocking waters throughout the state for recreational fishing. So "the one that got away" is no longer a valid excuse.

***Dan Warfe and Eoin Ryan***

#### **SKM, MELBOURNE**

The last few months have been very busy for the SKM ecology team in Melbourne (well perhaps slightly longer than a few months - being our attempt at an excuse for the absence of our ASL newsletter



contributions lately). Our team has recently expanded with the return of fluvial geomorphologist **Dr. Peter Sandercock**, who has been postdocing in the U.K. for the past 3 years. He and **Axel Allgaier** have been successful in winning a project to reintroduce large woody debris into the Avoca River.

**Simon Treadwell** has been in high demand conducting water quality risk assessments for Melbourne's reservoirs for the proposed source water changes under the Victorian Water Plan. **Melinda Holt** and **Sam Hannon** have also been conducting environmental risk assessments for the Sugarloaf Pipeline project and the Monash-CityLink-West Gate upgrade.

**Andrew Sharpe** has finally completed designing monitoring programs for the priority rivers as part of the Victorian Environmental Flows Monitoring and Assessment Program (VEFMAP) and is looking forward to doing something else for a while..

**Dion Iervasi** (based in the Hamilton office) and **Bonnie Atkinson** have also joined the SKM ecology team in the last 12 months and have been busily contributing to a wide range of freshwater and wetland ecological projects. Bonnie graduates with her PhD from Monash Uni in a couple of weeks, and Dion is almost there in terms of getting his PhD thesis in (although enjoying the distractions of a new baby girl).

The outlook for the SKM ecology team is looking very bright, with lots of interesting projects around.

**Bonnie Atkinson**

**AUSTRALIAN RIVERS INSTITUTE,  
GRIFFITH UNIVERSITY, BRISBANE**



**Ms Iris Tsoi** has recently commenced her Masters research project with her supervisors **Dr Christy Fellows** and **Dr Wade Hadwen**. Iris will be investigating variability in the elemental stoichiometry (C:N:P) of organisms along the length of the Logan River, in southeast Queensland. Her project links in well with the eWater CRC Project F1 activities in the Logan River coordinated by Christy and Wade, which will continue to examine patterns in carbon and nitrogen forms and processes in this catchment. Upcoming fieldwork for F1 involves the monthly collection of samples from the mainstem and tributaries of the Logan River, to investigate relationships between landuse, flow and in-stream processes on the delivery of nutrients to the lower Logan River and, ultimately, Moreton Bay.

**Amanda Posselt** recently attended the conference: 7th ICTC (International Conference on Toxic Cyanobacteria) in August 05-10 2007. It was in Rio das Pedras (club med), Rio de Janeiro State, Brazil. There were quite a few prominent international and Australian cyanobacteria researchers there, one of the better talks was the keynote by Dr. Hans Paerl "global proliferation of toxic cyanobacterial blooms: the connections to human-induced and climate change". According to Amanda the whole experience was a lot of fun and the Brazilians really know how to party.

**David Sternberg** has started his honours project investigating various aspects of yellowbelly (*Macquaria ambigua*) ecology in the Moonie River, upper MDB. David is jointly supervised by **Harry Balcombe**, **Jon Marshall** (DNRW) and **Angela Arthington**. David, Harry and Adam Kereszy presented aspects of their current research at the Australian Society for Fish Biology conference in Canberra in September. All had a great time and although the conference attendance was small there were many excellent freshwater presentations and the atmosphere was warm (but not the temperature) and friendly.

This year's International Riversymposium was run jointly with the 2nd International Environmental Flows Conference, with strong support from The Nature Conservancy, USA. Over 600 delegates attended from 57 countries. There was a strong contingent from ASL, and from the Australian Rivers Institute at Griffith University, with Angela Arthington and **Stuart Bunn** playing key roles in organising and managing the symposium and the e-flows panel of experts which ran from day 1 to day 4, giving a short summary of delegate's comments and new findings each day. The symposium and conference are producing a formal Declaration, entitled The Brisbane Declaration: Environmental Flows are Essential for Freshwater Ecosystem Health and Human Well-Being. This will be posted shortly on the TNC and ARI Websites and widely distributed via conferences, meetings and agencies around the world.

And finally, **Peter Pollard** (leading the way as a science and culture ambassador) was invited to open an art exhibition and his unedited report follows:-

**"Ebb & flow" Exhibition, Circle Gallery, West End.**

By Dr Peter Pollard (ARI)

*I was most honoured by Glenda Orr's (Queensland College of Arts, Griffith University) invitation to open Impress Printmakers exhibit of fine art on 7 September called Ebb and Flow, to about 100 patrons. "Ebb" on its own has negative connotations, the meaning being to recede from the land. Ebb is most appropriate in our current water shortage where it's not just the tide but also our drinking water that is leaving the landscape. However, when "ebb and flow" team-up the tone is upbeat describing degradation but its coupled with growth or the rhythmic movements of water and changing moods of the landscape. All of which well describes the work of the artists in this exhibition. Linocuts and etchings stood out; well at least it seemed to me to be an evening for the "Cutters and Scatters" as I called them. There also seemed to be an undercurrent of competition between the two forms of expression. But all the works struck me as being very different, clever and of great appeal.*

*The exhibit was an exploration and response of local emerging artists to water and river life. The works were expressions of the communities concern for the scarce and precious nature of water in South East Queensland. The art was sometimes emotional, sensual and seductive with strong overt political comment. Elizabeth Woodfield's works emphasised the loss of catchment habitat while Kay Ellis (work pictured) emphasised our "troubled waters" — the communities' uncertainty about re-cycling water for drinking. Works expressed the lack of connectivity of the city with their catchments as our sources of water. The art showed the CBD sucking the life out of the surrounding landscape leaving it bone dry with the familiar deep-cracked clay pans. These mosaics*

*were awesome in themselves, but as city dwellers, we were confronted with the death of the landscape we so much depend on. A lone mangrove and a moonrise over an estuary articulated the importance of water bodies to our psyche as places of solace. The artists reminded us that rivers lakes and seashores are places we go to contemplate; we are drawn to their size, tranquillity and rhythmic tidal movements and flows. Glenda herself presented the beauty of the channel country, every so relevant to ARI.*

*In my opening address I described the complexity of aquatic ecosystem process and the beauty we see in this complexity — the more we understand the less we know. I talked about water recycling and how we have been drinking recycled water since the day we were born. The audience seemed to enjoy the non-artists take on world of water with a few links of the science to the great works that surrounded them. My revelation from the evening — local artist exhibits are forums where the community expresses its views and concerns uninhibited. This was especially true for the "Ebb & Flow" exhibition.*

**Stephen (Harry) Balcombe**

#### UNIVERSITY OF ADELAIDE – DIATOM AND PALAEOCLIMNOLOGY LAB



THE UNIVERSITY  
OF ADELAIDE  
AUSTRALIA

Most of the group are now well settled into their new digs in the Geology (Mawson) Building.

Others have sought greener (colder, wetter!!) pastures with **Cameron Barr** holed out in Durham (U.K) doing some monitoring work for **Martin Kelly**, **Louise Mutton**, now married, writing up in Berlin, and **Craig McVeigh** now with the Water Commission in Canberra. **Gus MacGregor** will follow fiancée **Abby Sims** (2006 honours on paleolimnology of Tamboon Inlet) that way at the end of November having spent most of 2007 as a contract lecturer teaching undergraduate Physical Geography. All promise thesis chapters but supervisors continue to look forlornly at empty pigeonholes. Recent recruit and ARC APAI **Pat Maiden**, married in June, now seems to be permanently in the field leaving wife Kate to look after Cameron Barr's crazy Tenterfield Terriers. More explicitly, he says that he "aims to revise environmental water quality guidelines for streams the arid and semi-arid regions of SA and Victoria using a 12 year archive of diatom samples and water quality data collected by the SA and Victorian EPAs. The goal is to determine ecological thresholds to salinity and nutrients, using diatoms as an indicator of stream ecosystem condition. Focusing on dryland regions has led Pat to the Wimmera, Northern Mount Lofty Ranges and Flinders Ranges on a monthly basis, and quarterly field trips to far-north outback SA. The project is also exploring the ability for diatoms collected from dry stream beds to be used to retrospectively infer previous wetted condition" – but that's far too serious to include in scuttlebutt.

**Jennie Fluin** is writing up work from the ARC Linkage grant on lower Murray wetland histories and published her Lake Alexandrina and **Deborah Haynes'** Coorong story in a recent issue of *Hydrobiologia*. With **John Cann** she is supervising **Rachel Skinner's** palaeo work on the lower Lakes and channels - some very interesting stories of the past will emerge from this combined diatom/foram story. **Hossain Siddiqui's** C & N isotope records are providing fascinating insights into the trophic history of the riverland wetlands

and he's turned into the isotope lab Mr. Fixit. Other river wetland projects are progressing well with **Fiona Little** on Murrumbidgee wetlands and **Brendan Walsh** focussing on long records around the Murray Bridge – Wellington part of the system. **Ashley Natt** has expanded his research interests from the Adelaide reservoirs of his Honours to undertake a PhD on the history of El Niño from the Galapagos Islands with **Simon Haberle** (ANU). The ARC Linkage Coorong project is rolling along with **Deborah Haynes** continuing to reveal exciting estuarine diatom taxa and honours student **Ryan Black** creating 7000 year pollen records. Collaborators are many and varied including **Adriana García & Alan Chivas** (Wollongong – charophytes and ostracod shell geochemistry); **Jessica Reeves** (RMIT – ostracod taxonomy); **Evelyn Krull** (CSIRO – C & N isotopes); **Gus MacGregor** (diatom transfer function); **Dave McKirdy** (C biomarkers), **Gary Hancock** (geochronology). **John Tibby**, utility player on the Coorong grant, is also finishing up his ARC APD on NSW coastal lakes and writing proposals aplenty for 2008 and beyond. **Peter Gell** has come to grips with being back at work after hiding away in the **Geoff Petts** laboratory in Birmingham for most of 2006. He continues to lead the ARC Environment Futures network working group OZPACS looking at 500 years of change to Australian Ecosystems and, with **Sheri Fritz** (U. Nebraska), the IGBP Limpacs “salinity, climate, and salinisation” project where, at a recent meeting in Nanjing, he established a research network across India, Tibet, China and Mongolia to examine the relative influence of people and climate change on water resources in the region.

#### **Peter Gell & John Tibby**

#### **University of Otago, Department of Zoology – The fish group**

UNIVERSITY  
of  
**OTAGO**



*Te Whare Wānanga o Ōtago*

The 'freshwater fish' lab at Otago has seen some recent departures. **Esben Kristensen** completed his PhD on brown trout migration and movement in the Taieri River, and for his efforts was rewarded with a permanent job in the The National Environmental Research Institute, Denmark. **Tobias Bickel** also completed his PhD on the role of the invasive macrophyte *Lagarosiphon major* in Lake Dunstan. After a wait of several months involving endless security checks by Australian customs officials, Tobias was finally allowed into Australia to commence a post-doc at the University of New England. **Shannan Crow** completed his PhD on genetic, morphological and behavioural comparisons of two non-diadromous galaxiids, and is now with NIWA, Christchurch. **Quinn Cannon** completed his MSc on Banded kokopu movement and residency, and has returned to the USA to take up a research assistant position. **David Harris** also completed his MSc on food supply and brown trout distribution.

Despite the departures, there are still plenty of folks here keeping up the good work. Of the continuing PhD students, **Andy Hicks** continues to grind the otoliths of any unlucky fish that happens to come his way, finding plenty of non-diadromous fish in places where only diadromous fish were thought to swim; **Adrian Lill** spends his nights out sampling small Otago estuaries, and his days puzzling over whether they should be classified as intermittently open or intermittently closed; **Nicholas Dunn** has various non-diadromous galaxiids breeding happily in his garden enabling a detailed comparison of morphological and life-history variation in different hydrological environments; **Katrin Geist** has completed several arduous comparisons of fish and invertebrate communities in high

alpine lakes with varying fish status and has lived to tell the tale. Of the MSc students, **Rasmus Gabrielsson** is tracking the movements of trout in the upper Clutha River basin, and is looking far more relaxed now that he has some data after a frenzied week at ANU analysing several 100 otoliths. **Jeff Vanderpham** is looking less relaxed as he hasn't got any data and is about to start on behavioural experiments examining interactions between common bully and perch. **Ricky Olley** is close to finishing his MSc on trout movement and recruitment in the Motueka River. **Gerry Closs** has been plotting and scheming on finding ways to study the impact of a new lake formed last week when half a mountain dropped into the Young River valley. The lake's 2km long and filling fast, and it'd be great to be in at the start of the succession. Of course, that's assuming the lake's still there by christmas. Gerry is also planning a trip to Fiordland in Feb to examine relationships between fiord productivity and the recruitment of diadromous fish to Fiordland streams.

New arrivals to the lab include PhD students **Leonie Kücholl** who is continuing work on brown trout and food supply relationships, **Beate Biershenck** who will study mysid life history and movement in large river estuaries (we're considering mysids to be nominated as a sort of 'honorary' fish), and **Abbas Akbaripasand** who will examine interactions and coexistence between upland bully and trout.

Anyway, it's Friday afternoon and someone is murdering a lovely Scottish folk tune on the bagpipes outside my office window. Obviously, it's not possible to work any longer under such conditions, so time for the end-of-week beer.

### Gerry Closs



**FORTHCOMING CONFERENCES / WORKSHOPS****water:  
an inconvenient truth**

A southern hemisphere WARNING

**JOINT MEETING OF THE  
NEW ZEALAND FRESHWATER SCIENCES SOCIETY  
AND THE AUSTRALIAN SOCIETY FOR LIMNOLOGY****Queenstown, New Zealand  
3rd to 7th December 2007*****Incorporating the 40<sup>th</sup> Anniversary of the NZFSS (LIMSOC)***

We have three great speakers indicate their interest in giving plenary talks, providing the New Zealand, Australian and United States perspectives on issues of relevance to freshwater.

**Morgan Williams** is NZ's Parliamentary Commissioner for the Environment  
(<http://www.pce.govt.nz>)

**Peter Cullen** (<http://www.thinkers.sa.gov.au/pcullen.html>) is fundamentally involved in the freshwater problems besetting Australia.

**Bruce Wallace** (Professor of Entomology and Ecology at the University of Georgia, Athens, Georgia (USA)  
(<http://www.uga.edu/ecology/people/faculty/wallace.htm>)

**Venue:**

Millennium Hotel Queenstown (Conference Venue and accommodation)  
Corner Frankton Road and Stanley Street, PO Box 551, Queenstown, NZ  
tel: +64 3 441 8888 fax: +64 3 441 8889 reservation: +64 9 309 4420  
email: [millennium.queenstown@millenniumhotels.co.nz](mailto:millennium.queenstown@millenniumhotels.co.nz) see: ([Click here for details.](#)).

**AND**

Copthorne Hotel and Resort Queenstown Lakefront  
Corner Frankton Rd & Adelaide St, Private Bag, Queenstown, New Zealand  
tel: +64 3 442 8123 fax: +64 3 442 7472 reservation: +64 9 309 4420  
email: [copthorne.lakefront@millenniumhotels.co.nz](mailto:copthorne.lakefront@millenniumhotels.co.nz) see:  
([More information click here](#))

**Accommodation:**

- 170 and 200 rooms (mix of twin/single) are being held at Millennium Hotel and Copthorne Hotel. Rooms at Backpackers will also be arranged for Student accommodation.

**Airlines:**

Queenstown Airport (<http://www.queenstownairport.co.nz/>) is serviced by:

- Air New Zealand (<http://www.airnewzealand.co.nz>)
- Qantas (<http://www.qantas.com.au/>)

**Preliminary Meeting Schedule:**

- **Sunday December 2<sup>nd</sup> - Workshops**  
Proposed Workshops include:
  - Fisheries Assessment Protocols – Envirolink Tools Project Workshop:  
Convener – Chris Arbuckle
  - Taxonomic Fair (macro invertebrates, fish, macrophytes): Convener –  
Dr Jon Harding
  - Public session - water: an inconvenienttruth: Convener – Dr Marc  
Schallenberg.
- **Monday December 3<sup>rd</sup> - Conference Opening Session**
  - 1pm – Opening Ceremony.
  - 1.40pm – Guest to open TBA.
  - 2pm – Morgan Williams, “New Zealand Inconvenient Truth” (40mins,  
plus 10mins questions)
  - 2.50pm – Peter Cullen, “Australian Inconvenient Truth” (40mins, plus  
10mins questions)
  - 3.30pm – Afternoon Tea
  - 4pm – Bruce Wallis, “USA Inconvenient Truth” (40mins, plus 10mins  
questions)
  - 4.50pm – Drinks
  - 5.20pm – 6pm – Panel discussion (with drinks in hand).
- **Tuesday December 4<sup>th</sup> – Presentations.**
- **Wednesday December 5<sup>th</sup> – Presentations and Poster Session.**
- **Thursday December 6<sup>th</sup> – Presentations.**
- **Friday December 7<sup>th</sup> – Field Trips.**

**Call for Papers:**

Abstract submission (Presentation and Poster) from 1 September 2007 with deadline for papers 30 September 2007.

**Presentations Format:**

**Oral Presentations:** Contributed and invited presentations are limited to 12-13 minutes plus 2-3 minutes for discussion (**maximum 15 minutes per presenter**). Session moderators will strictly enforce these limits. Powerpoint presentations are the only format allowed for oral presentations.

**Posters:** The Conference Committee strongly encourages participants to consider submission for poster presentations. Posters are an excellent medium for detailed and extended discussion of your research and allow for complex charts, graphs, tables, or photographs that are difficult to present in an oral presentation session. This year we will have a special poster session on the Wednesday afternoon, where authors will be expected to attend their poster.

Web site: <http://limsoc.rsnz.org/>

**Conference Committee:**

Chris Arbuckle (Chair), Environment Southland.

Email: [chris.arbuckle@es.govt.nz](mailto:chris.arbuckle@es.govt.nz)

Prof Colin Townsend (University of Otago)

Dr Gerry Closs (University of Otago)

Dr Christoph Matthaei (University of Otago)

Jay Piggott (University of Otago)

Rachel Ozzanne (Otago Regional Council)

Murray Nielson (Dept. of Conservation)

Maurice Rodway (Fish & Game – Southland)

Dr Belinda Robson ASL Rep. (Deakin University)

Email: [belinda.robson@deakin.edu.au](mailto:belinda.robson@deakin.edu.au)

Conference manager: Ali Howard, Nelson Tourism Services



## ADVERTISEMENT

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Dear ASL

I bring to your attention the services of Australian Waterlife. A laboratory dedicated to the taxonomic identification and ecological investigation of Australian aquatic microfauna.

Aquatic microfauna (Microcrustacea and Rotifera) are tiny animals that swim passively in the water column of lakes (ponds, dams, wetlands, temporary waters), and in the back waters of slow moving rivers. The microfaunal community of most inland waters ranges in size up to 2mm. In terms of biomass and productivity the dominant microfaunal animal groups in most inland waters are the Microcrustacea and Rotifera.

Aquatic microfaunal communities are highly sensitive to environmental variation, responding very quickly to changes in the environment, due in part to short generation times. As result of changes in their abundance, species diversity or community composition can provide indications of environmental change or disturbance. These may be in response to alterations in nutrient loadings, acidification, contaminants, fish densities, algae, and sediment inputs.

Aquatic microfauna play a pivotal role in aquatic food webs as they are an important food source for fish and invertebrate predators; and they graze heavily on algae, bacteria, protozoa and other small invertebrates. They also play a key role in the decomposition pathways of inland waters.

In a water body if there is no/little microfauna, there is no food for many macro-invertebrate taxa, larval or juvenile fish, thus no recruitment to the adult fish population, and with the right conditions the possibility of algal blooms and a reduction in water quality. To state **this very simply** No microfauna = No fish.

Please feel free to contact me if you have any queries, or if I may be of any assistance.

Yours Sincerely,

Dr. Robert Walsh.

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| Ordinary Membership with hard copy of newsletter   | \$ 77.00 (incl.GST) |
| Student Membership with email copy of newsletter:  | \$ 28.00 (incl.GST) |
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